

## REMARKS

The Final Rejection mailed November 6, 2003, has been carefully considered. In response thereto, the application is believed to place it into condition for allowance. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the Final Rejection and issuance of a Notice of Allowance.

The Applicants respectfully submit that the present claimed invention would not have been obvious over *Sorin et al* in view of *Swanson et al* and therefore traverse the ground of rejection under 35 U.S.C. §103.

The present claimed invention includes a feature in that the second optical path length is changed *within the second optical fiber*. As noted above, examples set forth in the originally filed specification include stretching, compression, and magneto-optical and electro-optical techniques. In a preferred embodiment, and as recited in originally filed claim 4, the physical length of the fiber is changed.

The Final Rejection acknowledges that *Sorin et al* does not anticipate the present claimed invention. Instead, the Final Rejection cites *Swanson et al* for that feature. However, the Applicants respectfully submit that it would not have been obvious to combine the two references to realize the present claimed invention.

The Final Rejection asserts that *Swanson et al* teaches changing the optical path length in an optical fiber 26 by use of a piezoelectric transducer 40. However, the reference teaches in column 7 that the transducer modulates the optical path length at a frequency  $f_M$ , which is selected to be higher than the predominant noise spectrum, and that the peak-to-peak oscillating movement or optical delay change is one-half of the wavelength  $\lambda$  of the source 12. Because of the high frequency and minute distance, such a transducer 40 would have been wholly unsuitable

as a replacement for the moving mirror of *Sorin et al.* Thus, a person having ordinary skill in the art would not have been motivated to combine the references in the manner suggested in the Final Rejection and would in fact have been motivated away from doing so.

The use of the PZT cylinder in *Swanson et al* is not for the purpose of optical path length change, but is used for modulation of the optical signal to facilitate the interference peak detection. The present claimed invention permits a system which is mechanically, electrically and optically simpler, yet provides quasi-static optical path length measurements that are precise to better than half the coherence length of the light source.

In addition to the reasons set forth above, it is clear from both *Sorin* and *Swanson et al* that a moving mirror is used to accomplish the change in path length required to cause the path lengths to match, whereas the present claimed invention permits the use of an all fiber method which has lower losses and path length change ranges that are not limited by the mirror travel and the associated losses. Furthermore, the path length change range may be extended to any length with almost no insertion loss and is limited only by the strength of the fiber.

Therefore, the Applicants respectfully submit that the references applied by the Examiner would have provided no teaching or motivation to combine them as proposed in the Final Rejection and would in fact have taught away from such a combination.

Finally, claims 6, 30 and 52 have been amended to depart further from the applied prior art and to recite the embodiment of Fig. 4B.

For the reasons set forth above, the Applicants respectfully submit that all grounds of objection and rejection have been overcome and that the present application as amended is in condition for allowance. Notice of such allowance is respectfully solicited.

In the event there are any questions relating to this Response or to the application in

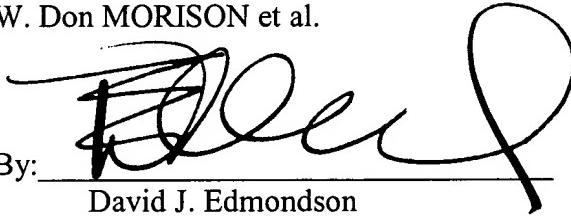
general, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that prosecution of this application may be expedited.

Please charge any shortage of fees or credit any overpayment thereof to BLANK ROME LLP, Deposit Account No. 23-2185 (115354-00107). In the event that a separate Petition for an Extension of Time is required to render this submission timely and either does not accompany this Response or is insufficient to render this Response timely, the Applicant herewith petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized above.

Respectfully submitted,

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